

ABSTRACT OF THE DISCLOSURE

A method and system providing a high flux of point of use activated reactive species for semiconductor processing wherein a workpiece is exposed to a gaseous atmosphere containing a transmission gas that is substantially nonattenuating to preselected wavelengths of electromagnetic radiation. A laminar flow of a gaseous constituent is also provided over a substantially planar surface of the workpiece wherein a beam of the electromagnetic radiation is directed into the gaseous atmosphere such that it converges in the laminar flow to provide maximum beam energy in close proximity to the surface of the workpiece, but spaced a finite distance therefrom. The gaseous constituent is dissociated by the beam producing an activated reactive species that reacts with the surface of the workpiece.